

Exhibit 731-4

NEWTON'S TELECOM DICTIONARY

STAY INFORMED

To be alerted by email to updates and corrections
go to www.cmpbooks.com/newton

CMPBooks
San Francisco

NEWTON's TELECOM DICTIONARY

copyright © 2003 Harry Newton

email: Harry@HarryNewton.com

personal web site: www.HarryNewton.com

business web site: www.TechnologyInvestor.com

All rights reserved under International and Pan-American Copyright conventions,
including the right to reproduce this book or portions thereof in any form whatsoever.

Published by CMP Books

An imprint of CMP Media LLC

Main office: CMP Books, 600 Harrison St., San Francisco, CA 94107 USA

Phone: 415-947-6615; Fax: 415-947-6015

Sales office: CMP Books, 12 West 21 Street, New York, NY 10010

Phone 917-305-3333; Fax 212-206-0387

www.cmpbooks.com

Email: books@cmp.com



CMP

United Business Media

For individual orders, and for information on special discounts for quantity orders,
please contact:

CMP Books Distribution Center, 6600 Silacci Way, Gilroy, CA 95020

Tel: 1-800-500-6875 or 408-848-3854; Fax: 408-848-5784

Email: cmp@rushorder.com; Web: www.cmpbooks.com

Distributed to the book trade in the U.S. by:

Publishers Group West, 1700 Fourth Street, Berkeley, California 94710

Distributed in Canada by:

Jaguar Book Group, 100 Armstrong Avenue, Georgetown, Ontario M6K 3E7 Canada

Printed in the United States of America

This book is also sold through www.Amazon.com, www.FatBrain.com and
www.BarnesAndNoble.com

Distributed to the book trade in the U.S. and Canada by Publishers Group West
1700 Fourth St., Berkeley, CA 94710

Fax: 408-848-5784

cmp@rushorder.com

ISBN Number 1-57820-307-4

March 2003

Nineteenth Edition

Matt Kelsey, Publisher

Ray Horsk, Senior Contributing Editor

Saul Roldan, Cover Artist

Lisa Gioguinto, Project Manager

Brod Greene, Text Layout

Calling Party Pays

Called Party Subaddress Information element that is passed transparently by the SPCs (if certain conditions are met) and can be used to further identify the destination party.

Called Party Camp-on A communication system service feature that enables the system to complete an access attempt in spite of issuance of a user blocking signal. Systems that provide this feature monitor the busy user until the user blocking signal ends, and then proceed to complete the requested access. This feature permits holding an incoming call until the called party is free.

Callender Switch A very rudimentary, early telephone switching system developed by Romaine Callender and the Lorimer brother in the late 1800s.

Caller ID Your phone rings. A name pops upon on your phone's screen. It's the name and number of the person calling you. Actually, it's the originating telephone number and the name the phone company thinks is the subscriber. The originating telephone number is stored in the originating central office equipment register, which is a database. That number supports a further database lookup, which associates the directory listing, assuming that the originating number is listed (i.e., not unlisted, or "nonpub" for nonpublished). The name and number information is passed through the local and long distance networks, and appears on your Caller ID box or your display telephone between the first and second rings. The delivery of Caller ID information assumes several things. First, the entire network of switches must be supported by SS7 (Signaling System System #7). Second, the calling party must originate the call from a single-channel line, rather than a multichannel trunk (e.g., T-1). Third, the originating line/caller must not block the transmission of the information. If all of these criteria are not met, your Caller ID box will display "ANONYMOUS" or "NOT AVAILABLE." Caller ID is one of several CLASS (Custom Local Area Signaling Services) provided by your LEC (Local Exchange Carrier). There generally is both a small installation charge and a monthly charge for Caller ID. Caller ID lets you amaze your parents and scare your technophobic friends, when you answer the phone with something like "Hi, Harry! Great Dictionary!" Caller ID also helps you avoid those dinnertime calls from telemarketers. They always block their numbers. By the way, Caller ID is not the same as ANI, although they often are confused. See also ANI, Caller ID Message Format (for a very detailed explanation), and CLASS.

Caller ID Message Format Calling Number Delivery (CND) came about as an extension of Automatic Number Identification (ANI). ANI is a method that is used by telephone companies to identify the billing account for a toll call. Although ANI is not the service that provides the information for CID, it was the first to offer caller information to authorized parties. The CID service became possible with the implementation of Signaling System 7 (SS7). The CID information is transmitted on the subscriber loop using frequency shift keyed (FSK) modem tones. These FSK modem tones are used to transmit the display message in American Standard Code for Information Interchange (ASCII) character code form. The transmission of the display message takes place between the first and second ring. The information sent includes the date, time, and calling number. The name associated with the calling number is sometimes included also. Since the time CID was first made available, it has been expanded to offer CID on Call Waiting (CIDCW) as well. With CIDCW, the call waiting tone is heard and the identification of the second call is seen. In earlier editions of my dictionary, I included the complete formatting, down to individual bits. It's too technical for this dictionary. However, if you want the entire story in all its detail, go to http://www.testmark.com/develop/ml_callerid_cnf.html and read the article on "Caller ID Basics", by Michael W. Slawson of Intartek Testing Services, TestMark Laboratories. Michael has assured me that he will leave his excellent paper on the Web forever.

Caller Independent Voice Recognition Having a voice response unit recognize the voice of a caller without having been trained on the caller's voice.

Caller Name An enhancement of Caller ID. Prior to sending the originating telephone number to your display, the carrier associates that number with an electronic white pages listing, thereby transmitting both the originating number and the associated directory listing. Assuming that the number is listed and that the Caller ID number is not blocked, this provides a much better indication of the identity of the caller.

Calling A procedure which consists of transmitting address signals in order to establish a link between devices that want to talk to each other.

Calling Card A credit card issued by Bell operating companies, AT&T, MCI, Sprint and other phone companies (local and long distance) and used for charging local and long distance calls. Typically, the number on your calling card is the phone number of which you receive bills (home or business phone) plus a four digit Personal Identification Number

(PIN). Increasingly often it's not. I prefer to carry a calling card with digits completely different to my phone number since this provides me with greater security. It's harder for someone to figure out my calling card. Some phone companies — local and long distance — charge more for a call made with a Calling Card. Some don't. Bell Canada claims they trademarked the term "Calling Card" in Canada. If they did, good luck protecting it, since the term "calling card" is generic. See Breakage, Debit Card and Prepaid Calling Card.

Calling DTE A DTE (Data Terminal Equipment) which places a call to another DTE.

Calling Jack In manual switchboard systems, the jack that is used by the operator to connect the call that come in through the answering jack, to the circuit for the subscriber who will be receiving the call.

Calling Line ID Also called Caller ID. You are called. As the call comes in, you receive the phone number of the person calling you. See Caller ID for a full explanation. See also ANI, Calling Number Display, CLI, ISDN and Signaling System 7.

Calling Line Identification See CLI and Calling Line ID.

Calling Line Identification Facility A service feature, provided by a network, that enables a called terminal to be notified by the network of the address from which the call has originated. See Calling Line ID.

Calling List A call center term. A collection of records from a database that is used for a specific telemarketing campaign. See Calling List Penetration.

Calling List Penetration A call center term referring to outbound calls. The percentage of a call list for which the decision makers have been reached after a given number of attempts. See Calling List.

Calling Number An international term for what Americans call "ANI" — or automatic number identification. In other words, calling number simply tells you, the receiver of the call, who's calling. It tells you that by displaying the caller's number on the screen of your phone or the screen of your PC. And sometimes it might tell you who's actually calling. It can do that because some central offices (also called public exchanges) have the ability to dip into a database and replace the calling number with the name of the person who owns that phone number.

Calling Number Display Your phone has a LCD (Liquid Crystal Display) or LED (Light Emitting Diode) display. When your phone rings, it will show which telephone number (internal or external) is calling you. Some phone systems allow you to add the person's name to the calling number display. See also ANI and Caller ID.

Calling Party The person who makes (originates) the phone call.

Calling Party Camp-on A feature that enables the system to complete an access attempt in spite of temporary unavailability of transmission or switching facilities. Systems that provide this feature monitor the system facilities until the necessary facilities become available, and then proceed to complete the requested access. Such systems may or may not issue a system blocking signal to let the caller know of the access delay.

Calling Party Control CPC. Sometimes referred to as CPC Wink. A call supervision feature which provides the ability for a CO (Central Office) to signal the called party when the calling party hangs up. Some switches also provide CPC to the calling party when the called party hangs up. CPC allows the PBX, key system, or telephone answering device to reset the line so that it is ready to either accept or initiate another call. CPC is accomplished by either a loop current drop or reversal.

Calling Party Identification A telephone company service which tells the person being called the number and sometimes the name of the person calling them. They can then decide to answer or not answer it. See ANI, which stands for Automatic Number Identification.

Calling Party Number CPN. When a call is set up over an ISDN network, SS7 sends an IAM (Initial Address Message) as part of the ISUP (ISDN User Part) protocol. Included in the IAM is the Calling Party Number subfield, which contains the number of the calling party. Also included is a two-bit Presentation Indicator (PI), which indicates whether the terminating switch (cellular or PSTN) should pass the CPN to the called party. If the PI says "yes," the originating number is passed to the called party, who can see that number displayed on the telephone set or on an adjunct display device. The end result is Caller ID, perhaps also with the Caller Name, assuming that the called party has subscribed to those features. Based on recognition of the calling party, or the lack of it, Caller ID can prompt the called party to either accept or reject the call. See also Caller ID, Caller Name, IAM, ISUP, and SS7.

Calling Party Pays In the United States, cell phone users pay for incoming as well as outgoing calls. In Europe and in most countries elsewhere, the calling party pays. According to many people, paying for incoming calls retards the industry's growth. As a